

Mike Schagrin

Mike has been with US DOT's ITS Joint Program Office since its inception in 1992 when it was first created as the IVHS office under ISTEA. Mike headed up the ITS Standards program since its beginning in 1995 until 2004.



Currently Mike is the Joint Program Office manager for the Cooperative Intersection Collision Avoidance System and Integrated Vehicle Based Safety System initiatives.

Prior to coming to FHWA, Mike worked for the defense department on state-of-the-art technology programs similar to those being used in ITS. Mike has a BS in Mechanical Engineering and a MS in Systems Engineering.



Rural ITS Web Conference IVBSS & CICAS

Mike Schagrin
ITS Joint Program Office
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Safety Initiatives

- Integrated Vehicle Based Safety Systems (IVBSS)
- Cooperative Intersection Collision Avoidance Systems (CICAS)

IVBSS Goals

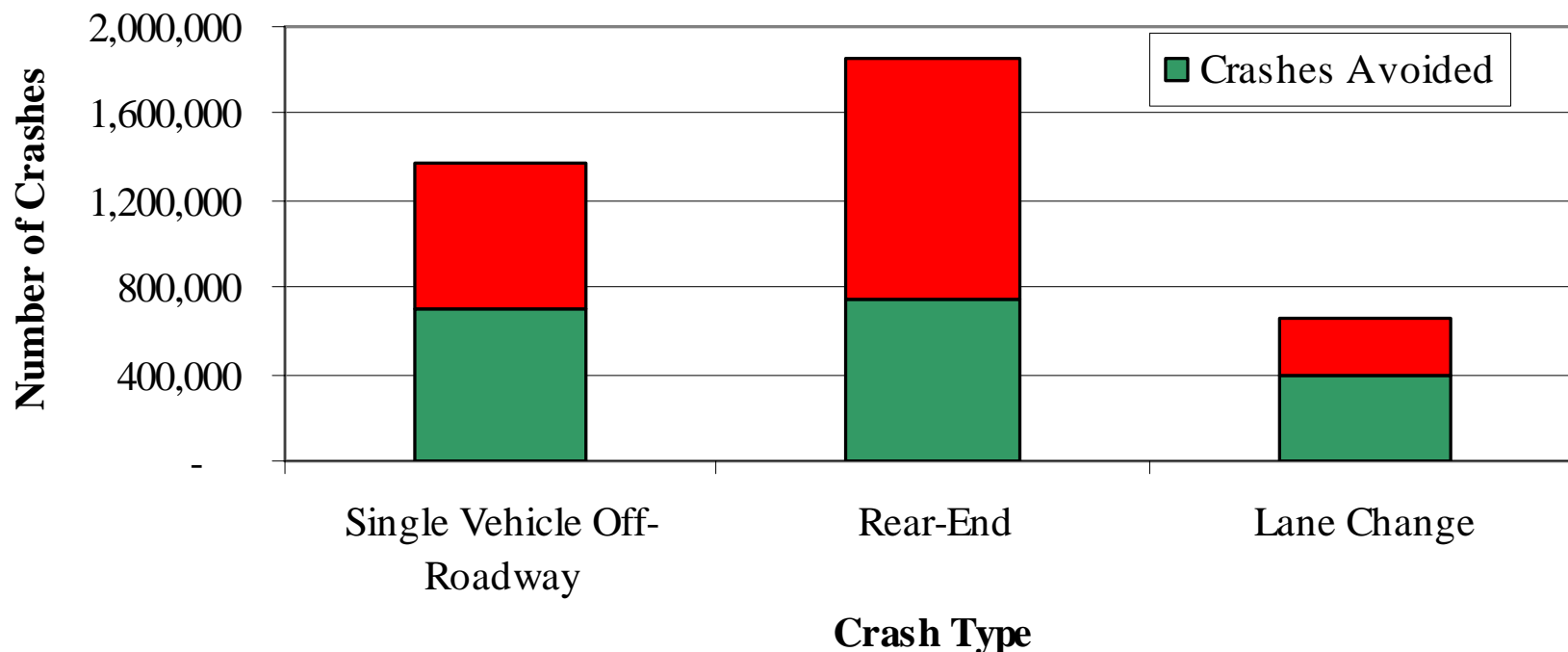
- To work with industry to accelerate the introduction of integrated vehicle-based safety systems into the U.S. vehicle fleet
- To evaluate safety benefits and user acceptance of vehicles equipped with multiple integrated safety systems

Background

- 1st large scale initiative focusing on safety system integration for 3 crash problem areas:
 - Run off the road
 - Of primary interest to rural environments
 - Lane change
 - Rear end
- Assessing performance benefits of combining systems
 - Performance data collected previously for each stand alone system
- Addresses both light and heavy vehicles

Crash Problem/Crashes Avoided

For light vehicles and heavy trucks using 2003 GES Data



3,877,000 total crashes – 1,836,433 crashes avoided (48%)

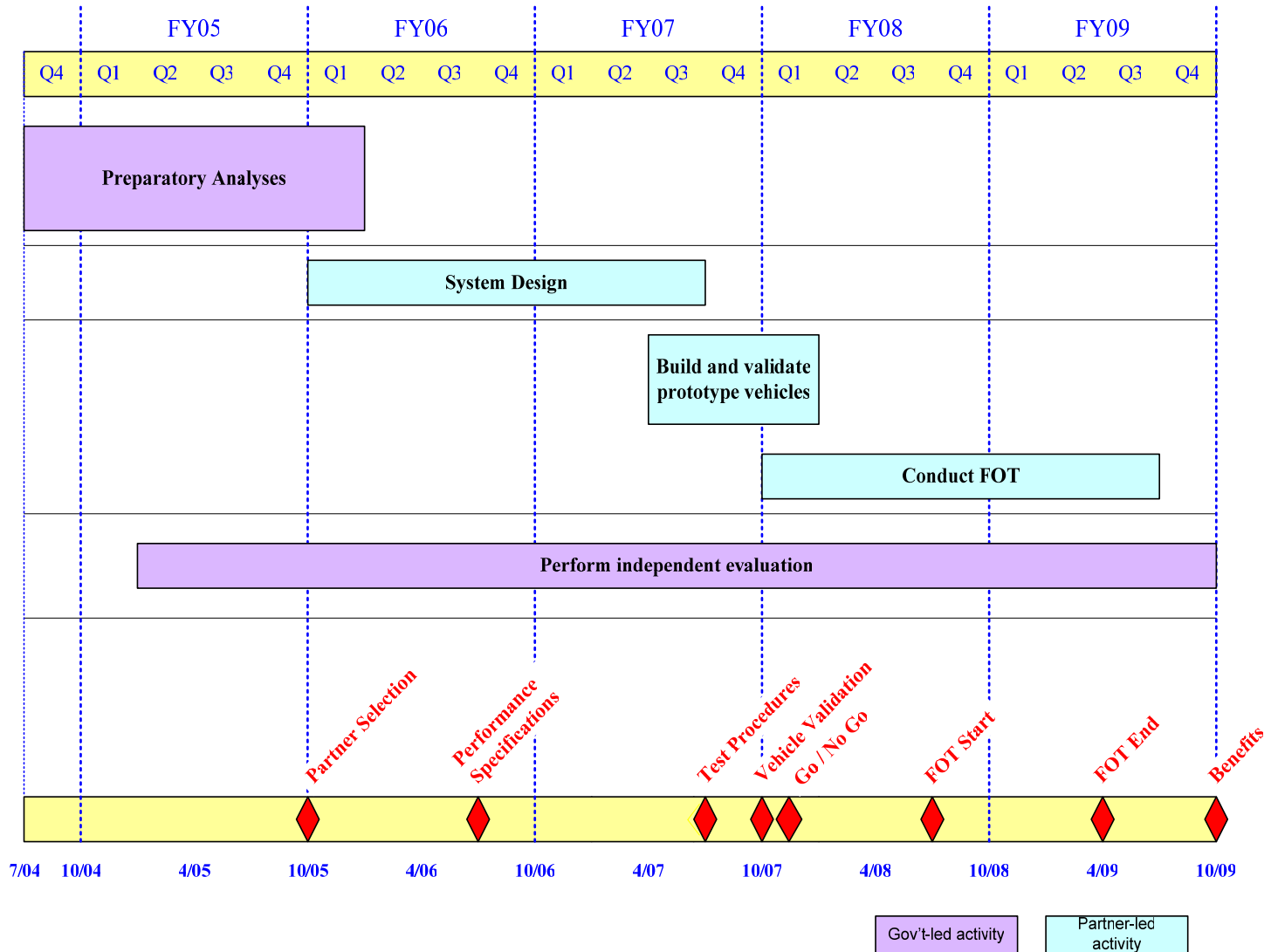
Benefits of Integration

- Increase safety benefits from improvements in overall system performance
- Reduce system cost
- Enhance consumer acceptance boosting product marketability

IVBSS Request for Applications

- RFA issued this past summer
- Four year effort
- Target award date is October 2005
- Single award to team which includes automotive and heavy truck OEMs
- Transit not in RFA due to major differences in functional and performance requirements

IVBSS Program Timeline and Milestones



CICAS

- A system of vehicle and infrastructure components working collectively to detect and avoid potential cross-path crashes at intersections
 - Uses Dedicated Short Range Communications (DSRC) technology
- Crash avoidance is performed through driver warnings and possibly vehicle control strategies

Why The Concern About Intersections

- In 2003, approximately:
 - 9500 **FATALITIES**
 - 1,300,000 **INJURIES**
 - 2,600,000 **CRASHES**
- Cost to society → \$100 Billion

CICAS Program Goals

- To develop and demonstrate cooperative intersection collision avoidance systems
- To assess the value and acceptance of cooperative collision avoidance systems
- To develop and provide tools to support industry deployments

Current Approach

- CICAS program partitioned into 3 areas:
 - Violations - signal and stop sign
 - Gap – stop sign assist
 - Gap - left turn assist

CICAS Partners

Public / Private/Academia



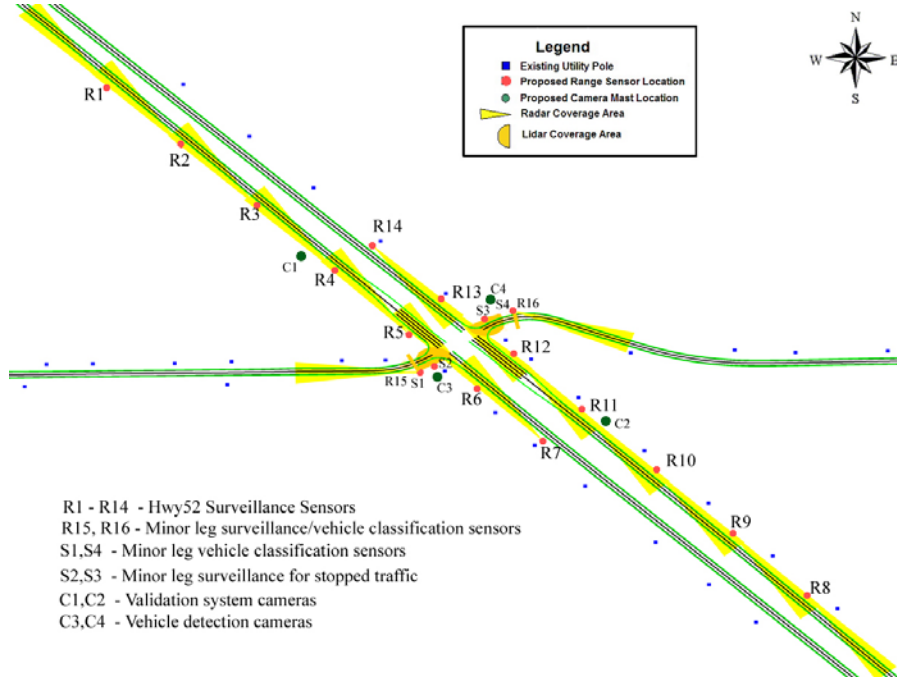
Violations – Signal/Stop Sign

- Design, Prototype, and FOT
 - Design and test driver vehicle alerts
 - Information is shared between the vehicle and infrastructure to provide a more effective warning
- CAMP lead with state support
- 4 year effort beginning next month

Gap - Stop Sign Assist

- Initial focus on high speed, rural road
- Examining the value and user acceptance of providing customized information to the driver on safe gap opportunities thru cooperative systems
 - Initially an infrastructure display based upon infrastructure sensor information and information provided from the vehicle
 - Future activity might include in-vehicle displays and/or vehicle control

Minnesota Test Intersection



Schedule – Stop Assist

- Establish agreement with MN to address the cooperative solution with an infrastructure display
 - Research - 2 years
 - Design/prototype – 1 year
 - FOT – 2 year
- Use CAMP for vehicle support
- Use MN's pooled fund study to broaden assessment of potential solutions

Gap – Left-turn Assist

- Initial focus on developing the infrastructure display
 - Urban and suburban signalized intersections
 - Includes vulnerable road users
- Future activity might include in-vehicle displays and/or vehicle control
- Significant research needs to be completed
 - Initial research done by PATH for infrastructure and Calspan for vehicle systems

Schedule – Left-turn Assist

- Cooperative agreement with CA to complete research
 - 3 years
 - Too early to project path to FOT
- Use CAMP to support vehicle research elements
- Extend task with CALSPAN for vehicle based systems



IVBSS and CICAS Initiatives

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Rural ITS CoP

<http://knowledge.fhwa.dot.gov/ruralits>